AUGUSTA ADVANCED TRANSPORTATION MANAGEMENT SYSTEM (ATMS)

PROJECT YEAR	2013-2016 (Phase I)
CUSTOMER DEPARTMENT(S)	Citywide-wide Implementation with Regional Benefits
PROJECT COST*	Richmond ITS Master Plan Implementation ($4.5 million) Richmond County ATMS Expansion ($3.3 million) *See Project Funding section below

PROJECT NEED

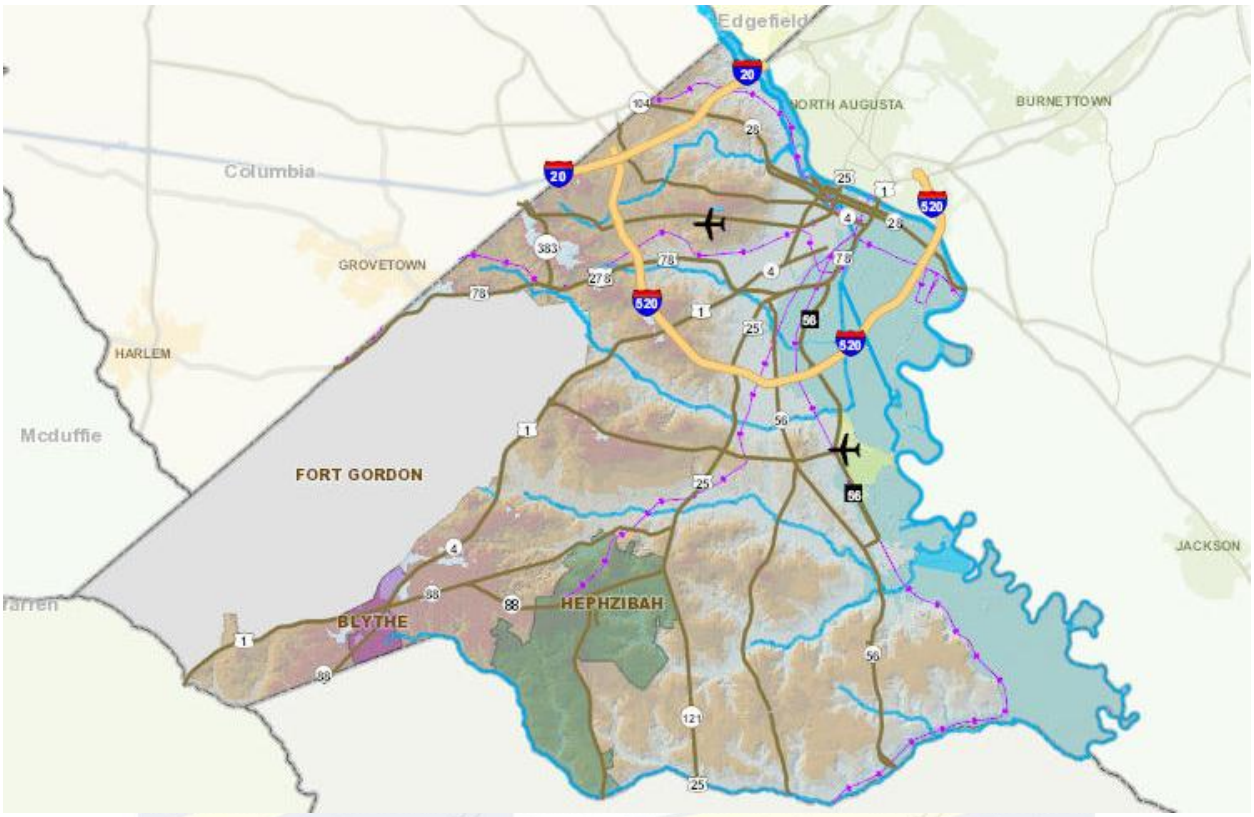
Augusta, GA is the transportation, medical, commercial, and industrial hub of a metropolitan area that spans multiple counties, crosses a state boundary, and is inhabited by nearly half a million residents. Several major roads, including interstates, US Highways, and State of Georgia highways intersect in Augusta. The infrastructure is burdened by the influx of passenger, commercial, government, and military vehicles on a daily basis.

Maintaining a large road network is an expensive undertaking requiring funds for planning, construction, traffic management, and ongoing maintenance. Obviously, this is compounded when commuter traffic into Augusta has continued to increase annually. Likewise, events such as the annual Masters Golf Tournament, which increases the load on Augusta's roads by thousands of cars per day, provide a great opportunity for technology to be applied to improve traffic flow. Growth in population and traffic demand has resulted in increased congestion levels and incidents so that there is a need to:

- Expand and update the traffic and emergency management operations, capabilities and coordination to improve traffic flow
- Maximize the efficiency of the existing roadway networks
- Improve public safety vehicle response times and intersection safety.

In an effort to reduce the capital cost of physical improvements to rights-of-way, Augusta is utilizing technology to improve the traffic flow and maximize the efficiency of the existing roadway networks.

Augusta's expensive road network can be seen using the city's Geographic Information Systems (GIS) web site located at: http://gismap.augustaga.gov/augustajs/. A view of the road network is seen below.



Augusta's Major Road Network

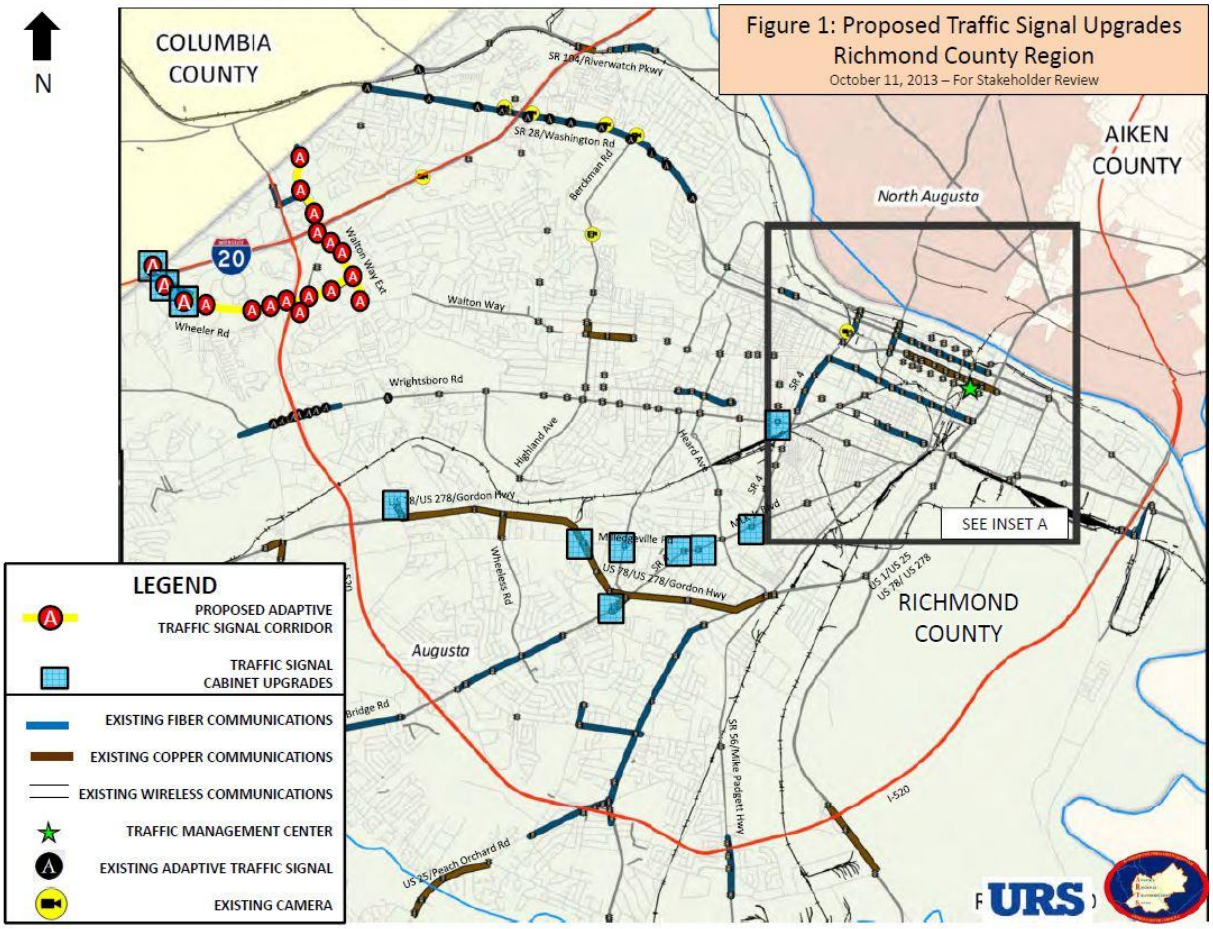
PROJECT DESCRIPTION

This project involves the expansion and/or upgrade of Intelligent Transportation System (ITS) and Traffic Signal Control components and capabilities along multiple local and state roads within Richmond County.

The project proposal entails deployment of approximately thirty-four (34) miles of reliable fiber-optic infrastructure, network equipment to existing signalized intersections and/or traffic signal cabinets. Fiber optic network communications connectivity will result in a reduction in traffic signal system down time, improved operations and reduced vehicle delays. The project will provide the capability to remotely monitor and configure system components and provide the necessary network bandwidth that allows for Closed Circuit Television (CCTV) video surveillance cameras to be deployed at critical intersections.

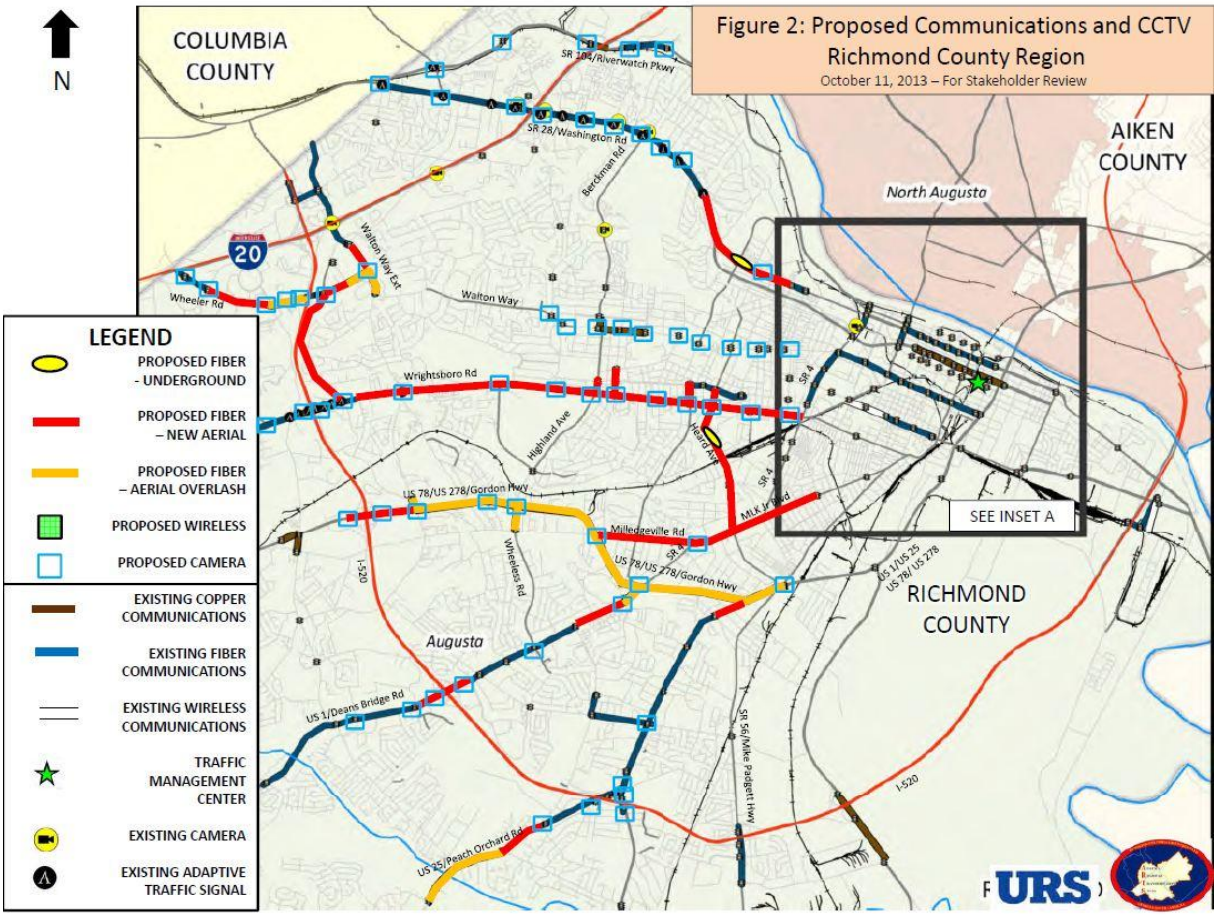
You can read more about Intelligent Transportation Systems at http://its.dot.gov/, the US Department of Transportation Web Site!

The map below illustrates the general improvements that will be taking place in regard to traffic signals. Augusta already uses a handful of adaptive signals along major corridors (Washington Road and Wrightsboro Road) but the system will be expanded for additional high-traffic areas in order to ease traffic at peak times. The map also illustrates the need for improvement in the existing fiber-optic and copper communications links.



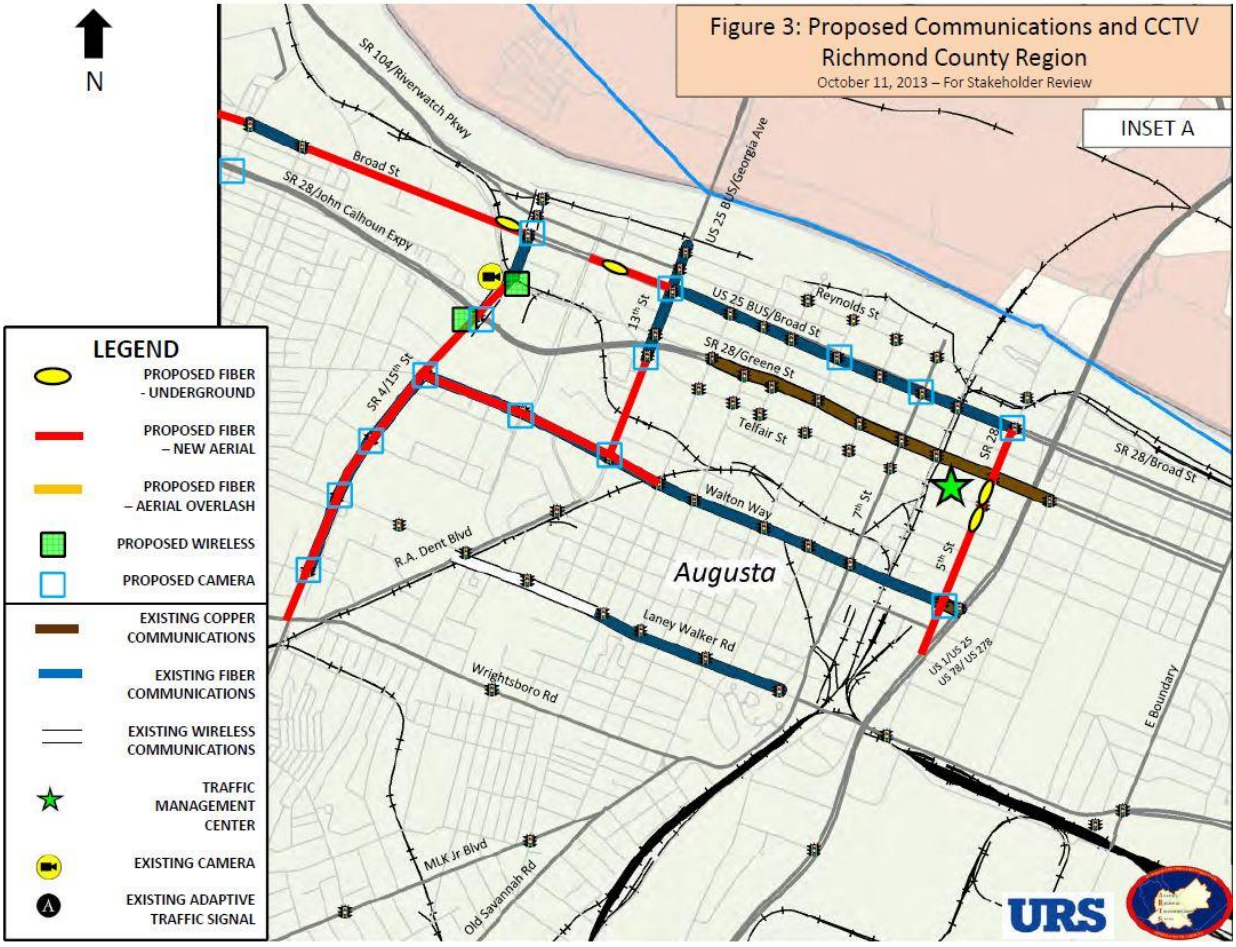
Fiber optic network communications connectivity will improve overall system maintenance resulting in significant cost savings. Traffic Operators will be able to remotely monitor, troubleshoot and optimize each intersection from Traffic Engineering's Traffic Management Center (TMC), which is located in downtown Augusta (the green star on the map). The enhanced capability will result in instantaneous notification in the TMC, and then a faster, more effective response because technicians will be deployed with the advance knowledge and equipment to address problems. The problem(s) will have already been diagnosed remotely, so the technician will go into the field prepared to fix the problem rather than diagnose it onsite.

The map below effectively illustrates the improvements taking place, particularly the fiber that will be installed. Figure 3, which follows, shows the same information for the downtown Augusta area.



Additionally, approximately sixty-five (65) surveillance cameras will be deployed at intersections and along major corridors with high crash frequency. The purpose of the cameras is to better monitor traffic flow conditions and better respond to incidents. The incorporation of CCTV cameras will allow Traffic Operators to respond to incidents and coordinate with emergency responders and law enforcement agencies, remotely traffic signal issues, and monitor other operations along the roadway/corridor.

An additional benefit of the CCTV component of this project is that video from the cameras will be available for streaming to the public through the city's web site. The video can be shared with emergency responders, internal and external stakeholders, and the public. Critical real-time video streams from active incident sites will allow emergency responders to better assess the current incident scene and conditions prior to arriving at the scene. The system will also provide the traveling public the necessary information to make informed decisions on taking alternative routes to their destination.



Hardware and software upgrades and expansion of the downtown Augusta TMC will occur as part of this project as well. The TMC will be equipped with a series of computers, servers and display monitors. The TMC will receive traffic signal system information and multiple simultaneous video feeds from the CCTV cameras through the fiber optic network. This capability will enable traffic engineers and operators to track signal operations and traffic flows and remotely adjust signal coordination and timing. Additionally, the Traffic Signal Maintenance Building and the 911 Dispatch Center will provide operational flexibility and maintenance oversight of the system.

The proposed field ITS devices will utilize existing power sources, cabinets and poles wherever possible to minimize construction time and limit environmental impacts. It is expected that no new cabinets or poles will be required. The ITS devices provided through this project will communicate with the Augusta TMC via the new Ethernet network using new Augusta fiber optic infrastructure throughout the County.

PROJECT FUNDING

The funding source for the Richmond Intelligent Transportation System (ITS) Master Plan Implementation is approximately $4.5 million of funds secured through the Transportation Investment Act (TIA) of 2010, which was approved by the voters of the Central Savanah River Area (CSRA) region in 2012. TIA

(informally but commonly known as “TSPLOST”) is funding a number of projects within Augusta, of which the ATMS is but one. This ITS Master Plan, which includes the items described in this document, is known as a “Band 1” TIA project, meaning that it is in the first round of projects targeted for completion. The current projected year for the completion of this phase of the project is 2016.

There is also a follow-on project called the Richmond County ATMS Expansion which builds on the work which is to be completed in Phase I. This project is expected to cost $3.3 million.

To read more about TIA in Augusta, please review the following web site which includes project descriptions and progress information (as supplied by Georgia DOT):

http://www.augustaga.gov/1920/Transportation-Investment-Act-of-2010-TS

The site also includes access to a dashboard for accountability purposes. The dashboard illustrates the funds that have come in for TIA in Richmond County, as well as descriptions of the projects that are being performed.

CONCLUSION

The vote in 2012 to approve TIA is already proving to be a major benefit for the Augusta area. The inclusion of the ITS as part of the implementation of TIA will ensure that the transportation management system will be drastically improved. The new features that will be added to the technology infrastructure will provide increased maintenance and repair capabilities for Augusta’s traffic engineers, and will provide more public access and information than ever before.